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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/740,076	12/18/2003	Hiroshi Takeda	20020802-004B	1388

34160 7590 08/04/2005

SUD-CHEMIE INC.
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EXAMINER

JOHNSON, CHRISTINA ANN

ART UNIT	PAPER NUMBER
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1725

DATE MAILED: 08/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/740,076	Applicant(s) TAKEDA ET AL.	
	Examiner Christina Johnson	Art Unit 1725	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12/18/03.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) 26 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

[Handwritten signature]

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 1-25, drawn to a catalyst composition, classified in class 502, subclass 66.
 - II. Claim 26, drawn to a process for the methanation of carbon monoxide, classified in class 423, subclass 600+.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions I and II are related as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product (MPEP § 806.05(h)). In the instant case the product as claimed can be used in a materially different process of use, such as a hydrocarbon conversion catalyst, i.e. isomerization or alkylation.
3. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.
4. Because these inventions are distinct for the reasons given above and the search required for Group I is not required for Group II and vice versa, restriction for examination purposes as indicated is proper.

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5. During a telephone conversation with Ms. Joan Simunic on July 21, 2005 a provisional election was made with traverse to prosecute the invention of Group I, claims 1-25. Affirmation of this election must be made by applicant in replying to this Office action. Claim 26 is withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

6. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-25 are rejected under 35 U.S.C. 102(b) as being anticipated by Matheson et al.

Matheson et al. (US 4,740,487) discloses a catalyst composition comprising ruthenium, a zeolite support, a Group VI or Group VIII metal, and a refractory support

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material (column 2, lines 35-60). Typically, the Group VI or VIII metal comprises one or more of cobalt, molybdenum, tungsten and/or nickel (column 2, lines 64-66). It is the position of the examiner that these metals would meet the limitation "metal capable of forming a metal-carbonyl species" as the same metals are required by the instant claims. The ruthenium may be loaded on the zeolite by impregnation (column 5, lines 8-12). The refractory support oxide is an inorganic oxide such as alumina, titania, zirconia, silica, and silica-alumina (column 3, lines 10-12). It is taught that the metal combinations are supported on a mixture of gamma-alumina and Y zeolite (column 3, lines 14-16). The gamma-alumina is considered to correspond to the binder material claimed. The amounts of materials taught by the reference meet the instantly claimed amounts.

The reference does not specifically disclose the pore size and pore volume of the zeolite. However, given that the reference discloses the same zeolite (i.e. zeolite Y) as required by the instant claims and further given that zeolites are characterized and classified based upon their porous structure, it is the position of the examiner that the zeolite of the reference would inherently meet the claimed pore size and pore volume. When the examiner has reason to believe that the functional language asserted to be critical for establishing novelty in claimed subject matter may in fact be an inherent characteristic of the prior art, the burden of proof is shifted to Applicants to prove that the subject matter shown in the prior art does not possess the characteristics relied upon. *In re Fitzgerald et al.* 205 USPQ 594.

As each and every element of the claimed invention is taught in the prior art as recited above, the claims are anticipated by Matheson et al.

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3. Claims 1-25 are rejected under 35 U.S.C. 102(b) as being anticipated by Wu et al.

Wu et al. (US 6,017,840) a catalyst composition comprising a crystalline aluminosilicate and a metal selected from the group consisting of nickel, palladium, molybdenum, gallium, platinum, chromium, rhodium, rhenium, tungsten, cobalt, germanium, zirconium, titanium, ruthenium, and combinations thereof (column 2, lines 50-55). It is the position of the examiner that these metals would meet the limitation "metal capable of forming a metal-carbonyl species" as the same metals are required by the instant claims. The metal can be loaded by impregnation (column 7, line 65 - column 8, line 5). Suitable zeolites include beta zeolite (column 3, lines 45-52). The zeolite may be combined with a binder material including gamma-alumina and silica (column 3, lines 52-68). The amounts of materials taught by the reference would meet the instantly claimed amounts.

The reference does not specifically disclose the pore size and pore volume of the zeolite. However, given that the reference discloses the same zeolite (i.e. zeolite beta) as required by the instant claims and further given that zeolites are characterized and classified based upon their porous structure, it is the position of the examiner that the zeolite of the reference would inherently meet the claimed pore size and pore volume. When the examiner has reason to believe that the functional language asserted to be critical for establishing novelty in claimed subject matter may in fact be an inherent characteristic of the prior art, the burden of proof is shifted to Applicants to prove that

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the subject matter shown in the prior art does not possess the characteristics relied upon. *In re Fitzgerald et al.* 205 USPQ 594.

As each and every element of the claimed invention is taught in the prior art as recited above, the claims are anticipated by Wu et al.

4. Claims 1-24 are rejected under 35 U.S.C. 102(b) as being anticipated by Liotta, Jr. et al.

Liotta, Jr. et al. (US 5,166,370) discloses a catalyst composition comprising one or more transition metal compounds supported on a zeolite material (column 2, lines 15-20). Suitable transition metals include platinum, palladium, silver, copper, vanadium, tungsten, cobalt, nickel, iron, rhenium, rhodium, ruthenium, manganese, chromium, molybdenum, iridium, and zirconium, preferably palladium, nickel, ruthenium, or iron (column 2, lines 55-69). It is the position of the examiner that these metals would meet the limitation "metal capable of forming a metal-carbonyl species" as the same metals are required by the instant claims. Suitable zeolite materials include faujasite zeolites and mordenite (column 3, lines 40-55). The transition metal compound may be supported on the zeolite by impregnation (column 4, lines 3-15). The composition may include a binder such as clay or alumina (column 4, lines 30-36). The amounts of material taught by the reference would meet the instantly claimed amounts.

The reference does not specifically disclose the pore size and pore volume of the zeolite. However, given that the reference discloses the same zeolite (i.e. zeolite Y and mordenite) as required by the instant claims and further given that zeolites are characterized and classified based upon their porous structure, it is the position of the

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examiner that the zeolite of the reference would inherently meet the claimed pore size and pore volume. When the examiner has reason to believe that the functional language asserted to be critical for establishing novelty in claimed subject matter may in fact be an inherent characteristic of the prior art, the burden of proof is shifted to Applicants to prove that the subject matter shown in the prior art does not possess the characteristics relied upon. *In re Fitzgerald et al.* 205 USPQ 594.

As each and every element of the claimed invention is taught in the prior art as recited above, the claims are anticipated by Liotta, Jr. et al.

5. Claims 1-7, 10-16, 19-20, and 22-24 are rejected under 35 U.S.C. 102(b) as being anticipated by EP 0 338 734.

EP 0 338 734 discloses a catalyst composition comprising ruthenium and nickel supported on zeolite beta by impregnation (page 2, lines 25-28). It is the position of the examiner that these metals would meet the limitation "metal capable of forming a metal-carbonyl species" as the same metals are required by the instant claims. The amounts of material taught by the reference would meet the instantly claimed amounts.

The reference does not specifically disclose the pore size and pore volume of the zeolite. However, given that the reference discloses the same zeolite (i.e. zeolite beta) as required by the instant claims and further given that zeolites are characterized and classified based upon their porous structure, it is the position of the examiner that the zeolite of the reference would inherently meet the claimed pore size and pore volume. When the examiner has reason to believe that the functional language asserted to be critical for establishing novelty in claimed subject matter may in fact be an inherent

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characteristic of the prior art, the burden of proof is shifted to Applicants to prove that the subject matter shown in the prior art does not possess the characteristics relied upon. *In re Fitzgerald et al.* 205 USPQ 594.

As each and every element of the claimed invention is taught in the prior art as recited above, the claims are anticipated by EP 0 338 734.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 8-9, 17-18, and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over EP 0 338 734 as applied above for claims 1-7, 10-16, 19-20, and 22-24 and further in view of Chang et al.

The teachings of the EP reference are as applied above for claims 1-7, 10-16, 19-20, and 22-24.

The difference between the reference and the claims is that the reference does not disclose that the catalyst composition contains a binder material.

Chang et al. (US 6,037,513) discloses a catalyst composition for the hydroalkylation of an aromatic compound and teaches that the catalyst is conventionally combined with a binder material such as alumina or silica (column 3).

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It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the composition taught by the EP reference to include the use of a binder material in light of the teaching by Chang et al. One of ordinary skill would have been motivated to include the use of conventional binder materials with a reasonable expectation of success because both catalyst compositions can be used in the same process of use.

Double Patenting

8. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

9. Claims 1-25 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-20 of copending Application No. 10/740,144. Although the conflicting claims are not identical, they are not patentably distinct from each other.

Application 10/740,144 claims a catalyst composition comprising a metal selected from the group consisting of ruthenium, rhodium, nickel, and combinations

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thereof, on a support selected from beta zeolite, mordenite and faujasite (claim 1). Refer also to claim 7.

The instant claims are encompassed by those of '144.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christina Johnson whose telephone number is (571) 272-1176. The examiner can normally be reached on Monday-Friday, 7:30-5, with Alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Dunn can be reached on (571) 272-1171. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Christina Johnson
Examiner
Art Unit 1725

8/1/05

CAJ
August 1, 2005